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TITLE: Recombinant combinatorial genetic library for the production of novel polyketides

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INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Khosla; Chaitan	Stanford	CA		
Hopwood; David A.	Norwich			GB2
Ebert-Khosla; Suzanne	Stanford	CA		
McDaniel; Robert	Palo Alto	CA		
Fu; Hong	Stanford	CA		
Kao; Camilla	Stanford	CA		

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CLAIMS:

We claim:

1. A library for synthesis of a multiplicity of polyketides which library comprises a multiplicity of individual cell lines wherein each cell line produces a functional polyketide synthase (PKS) such that each said cell line produces a different polyketide;

wherein each functional PKS comprises the products of: a first open reading frame (ORF) encoding a ketosynthase/acyltransferase (KS/AT); a second ORF encoding an acyl carrier protein (ACP); and a third ORF encoding a chain length determining factor (CLDF);

wherein the ORFs in said library are derived from at least three different aromatic PKS.

2. The library of claim 1 wherein at least some of said multiplicity of cell lines further include

an ORF encoding a polyketide cyclase (CYC); and/or an ORF encoding polyketide aromatase (ARO); and/or an ORF encoding a polyketide ketoreductase (KR).

3. The library of claim 1 which includes colonies wherein the functional PKS comprises the product of at least one of:

ORF1 (KS/AT)	ORF2 (CLDF)	ORF3 (ACP)
act	act	act

gra	act	act
act	gra	act
act	act	gra
tcm	act	act
tcm	tcm	act
act	act	tcm
fren	act	act
act	act	fren
tcm	tcm	tcm
fren	fren	act
fren	fren	fren

4. The library of claim 1 wherein said cell line further comprises an enzyme that is active on a PKS and is selected from the group consisting of an O-methyl transferase and glycosyl transferase.

5. The library of claim 1 wherein in at least one member of said library each said open reading frame is contained in a separate expression cassette.